TRAVAUX DU MUSÉUM NATIONAL D'HISTOIRE NATURELLE «GRIGORE ANTIPA»

THE JOURNAL OF "GRIGORE ANTIPA" NATIONAL MUSEUM OF NATURAL HISTORY

Travaux du Muséum National d'Histoire Naturelle "Grigore Antipa" 65 (1): 121–128 (2022)
doi: 10.3897/travaux.65.e77971

FAUNISTIC NOTE

New data on the taxonomy, distribution and host plants of subfamily Chrysochroinae (Coleoptera: Buprestidae) in Bulgaria

Vladimir Sakalian[1], Toshko Ljubomirov[1], Enrico Migliaccio[2], Victor Gashtarov[3], Danail Doychev[4], Georgi Georgiev[5]

1 *Institute of Biodiversity and Ecosystem Research, Bulgarian Academy of Sciences, 1 Tzar Osvoboditel Blvd., 1000 Sofia, Bulgaria*
2 *Science Naturali ed Ambientali, 47 Via Duccio Galimberti, 00136 Rome, Italy*
3 *PO Box 470, 1000 Sofia, Bulgaria*
4 *University of Forestry, 10 St. K. Ohridski Blvd., 1797 Sofia, Bulgaria*
5 *Forest Research Institute, Bulgarian Academy of Sciences, 132 St. Kliment Ohridski Blvd., 1756 Sofia, Bulgaria*

Corresponding author: *Georgi Georgiev* (ggeorgiev.fri@gmail.com)

Received 13 November 2021 | Accepted 9 February 2022 | Published 30 June 2022

Citation: Sakalian V, Ljubomirov T, Migliaccio E, Gashtarov V, Doychev D, Georgiev G (2022) New data on the taxonomy, distribution and host plants of subfamily Chrysochroinae (Coleoptera: Buprestidae) in Bulgaria. Travaux du Muséum National d'Histoire Naturelle "Grigore Antipa" 65(1): 121–128. https://doi.org/10.3897/travaux.64.e77971

Abstract

Data about distribution and host plants of 19 species-group taxa from subfamily Chrysochroinae are presented. In this study, fourth known locality in Balkan Peninsula of *Sphenoptera* (*Sphenoptera*) *cuprina cuprina* (wery rare taxon in this region) was established. Distinguishing characters of *S.* (*Chilostetha*) *laportei* and *S.* (*Ch.*) *substriata* allowing their better identification are given as well.

Keywords

Buprestidae, Chrysochroinae, taxonomy, distribution, host plants, Bulgaria.

Copyright *Sakalian, Ljubomirov, Migliaccio, Gashtarov, Doychev & Georgiev*. This is an open access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

PENSOFT.

Introduction

The subfamily Chrysochroinae (Coleoptera: Buprestidae) includes around 670 species and subspecies in the Palaearctic region (Kubáň et al. 2016), and 31 – in Bulgaria (Sakalian 2003).

The aim of this note is to present unpublished data about the taxonomy, distribution and host plants of 19 buprestid taxa from subfamily Chrysochroinae in Bulgaria.

Material and Methods

The biological material was collected by traditional entomological methods: collecting on flowers and bushes by entomological net; shaking of tree branches and canopies; collecting by soil and Malaise traps; rearing of adults in laboratory conditions from infested parts of host plants.

Additional data for some species and subspecies recorded in Bulgaria, received from Manfred Niehuis are also taken into consideration. Latter information does not contain data about the number of specimens found for each species or subspecies, that is why these taxa are listed below without specifying their number.

The SEM photomicrographs were obtained using a JEOL GSM-5510, operating at 10 kV.

The new status, synonyms and combinations concern Bulgarian taxa and published after summarizing publications of Sakalian (2003) and Sakalian and Langourov (2007) are reported according to Kubáň et al. (2016). The names of tribes and species and subspecies are listed in alphabetical order.

Bulgarian geographical regions are presented according to Guéorguiev et al. (1997).

The collections where the studied specimens are kept are listed in the text below. In this paper, the following abrevitions are used: DD – collection Danail Doychev, EM – collection Enrico Migliaccio; GG – collection Georgi Georgiev; p.c. – personal communication; VG – collection Victor Gashtarov; VS – collection Vladimir Sakalian.

Subfamily Chrysochroinae Laporte, 1835

Tribe Chalcophorini Lacordaire, 1857

***Chalcophora mariana* (Linnaeus, 1758)**

Material: Osogovo Mt.: Gabra protected area, 13.06.2001, 1 ex.; Maleshevska Planina Mt., 950 m, in the trunk of *Pinus sylvestris*, 1 ex., leg. D. Dojchev (DD); Pirin Mts.: Bansko, 1500 m, 21.06.2003, 1 ex.; West Rhodope Mts.: Yundola loc. near Velingrad, 20.07.2001, 1ex.; Velingrad, 28.06.2002, 1 ex.; 22.06.2003, 1 ex., leg. E. Migliaccio (EM).

***Chalcophorella* (*Chalcophorella*) *stigmatica* (Schoenherr, 1817)**

Material: Sandanski-Petrich Valley: Sveti Iliya Hill near Kalimantsi, 450–510 m, 10–11.05.2002, 1 ex., leg. E. Migliaccio (EM).

***Chalcophorella* (*Rossiella*) *fabricii* (Rossi, 1794)**

Material: Maleshevska Planina Mt.: Gorna Breznitsa Monastery, 550 m, 01.08.2002, 1 ex., leg. E. Migliaccio (EM).

Tribe Dicercini Gistel, 1848

***Capnodis tenebricosa tenebricosa* (Olivier, 1790)**

Material: Thracian Plain: SE Malak Chardak, 42°16′44″N, 24°38′48″E, 198 m, 30.05.2018, 1 ex., leg. T. Ljubomirov; S Zelenikovo, 42°22′50″N, 25°04′43″E, 290 m, 15.05.–14.06.2018, 3 ex., leg. T. Teofilova (VS); Sandanski-Petrich Valley: Rupite loc. near Petrich, 03.05.2002, 1 ex.; Kalimantsi, 12.05.2002, 1 ex., leg. E. Migliaccio (EM); Sakar-Tundzha Region: Ustrem, 15.05.2002; South Blask Sea Coast: Veselie, 16.05.2002; Yasna Polyana, 17.05.2002, leg. Schmitt; Sozopol, 01–08.07.2004, leg. W. Ziegler (Niehuis, p.c.).

***Capnodis tenebrionis* (Linnaeus, 1760)**

Material: Central Stara Planina Mts.: E Gostilitsa, 43°01′07″N, 25°22′58″E, 298 m, 25.07.2016, 1 ex.; Dryanovo, 42°58′17″N, 25°28′03″E, 242 m, 27.07.2016, 1 ex. leg. T. Ljubomirov (VS); Malashevska Planina Mt.: Strumyani, 06.06.2006, 1 ex., West Rhodope M: Bachkovo, on trunk of *Prunus avium*, 13.05.2004, 1 ex., leg. D. Doychev (DD); East Rhodope Mts.: NW Blagun, 41°42′11″N, 25°45′05″E, 442 m, 24.05.2018, 1 ex., leg. M. Naumova (VS); South Blask Sea Coast: Kavatsite, 13.05.2002; Veselie, 16.05.2002, leg. Schmitt; Sozopol, 29.06.2004, leg. W. Ziegler (Niehuis, p.c.).

***Dicerca aenea aenea* (Linnaeus, 1760)**

Material: Sandanski-Petrich Valley: Novo Konomladi, 120 m, 18.06.–25.06.2003, 1 ex., leg. V. Gashtarov (VG).

***Dicerca berolinensis* (Herbst, 1779)**

Material: Golo Bardo Mt.: Ostritsa protected area, reared from stem of *Carpinus betulus*; sample collection – 26.04.2003, adult emergence – 02.07.3003, 2 ex., leg. D. Doychev (DD).

***Dicerca moesta* (Fabricius, 1792)**

Material: West Rhodope Mts.: Dospat Dam, 25–27.07.2004, collected on *Pinus* sp., 1 ex., leg. V. Gashtarov (VG).

***Perotis lugubris lugubris* (Fabricius, 1777)**

Material: East Rhodope Mts.: Mazharovo, 25.04.–06.06.2005, soil traps, 1 ex., leg. N. Kodzhabashev (VS); South Black Sea Coast: Sozopol, 01–08.07.2004, leg. W. Ziegler (Niehuis, p.c.).

Tribe Poecilonotini Jakobson, 1913

***Lamprodila* (*Lamprodila*) *decipiens decipiens* (Gebler, 1847)**

decipiens Gebler, 1847: 407 (*Poecilonota*).

synonym: *dives* Guillebeau, 1889: 7; Sakalian, 2003: 72 (*Scintillatrix*); Sakalian and Langourov, 2007: 364 (*Scintillatrix*).

Material: Vitosha Mts.: Tihiya Kut loc., 1090 m, reared from stem of *Salix caprea*, sample collection – 23.04.2015, adult emergence – 20–26.05.2015, 14 ex.; Thracian Plain: September, 250 m, reared from one-year-old seedlings of *Salix caprea*, sample collection – 02.04.2016, adult emergence – 09.05.–20.06.2016, 62 ex., leg. G. Georgiev (GG part and VS part).

***Lamprodila* (*Lamprodila*) *mirifica mirifica* (Mulsant, 1855)**

mirifica Mulsant 1855: 146 (*Lampra*); Sakalian, 2003: 70; (*Scintillatrix*); Sakalian and Langourov, 2007: 364 (*Scintillatrix*).

Material: Sofia Plain: Hills around Dragomansko Blato near Dragoman, 24.04.2004, 3 pupae found in *Ulmus campestris*, leg. V. Gashtarov & E. Migliaccio (VG); West Rhodope Mts.: Bachkovo, 30.06.2001, 4 ex., leg. D. Doychev (DD); South Blask Sea Coast: Primorsko, 27.06.2004; Sozopol, 01–08.07.2004, leg. W. Ziegler (Niehuis, p.c.).

***Lamprodila* (*Lamprodila*) *rutilans rutilans* (Fabricius, 1777)**

rutilans Fabricius, 1777: 235 (*Buprestis*); Sakalian 2003: 70, 72 (*Scintillatrix*); Sakalian and Langourov, 2007: 365 (*Scintillatrix*).

Material: Belasitsa Mt.: Petrich, 12.06.2003, 1 ex., leg. D. Doychev (DD).

***Lamprodila* (*Palmar*) *balcanica* Kirchsberg, 1876**

balcanica Kirchsberg, 1876: 29 (*Poecilonota*).

nomen dubium: *bella* Gory, 1840: 116 (*Buprestis*); Sakalian, 2003: 74 (*Palmar*); Sakalian and Langourov, 2007: 365 (*Palmar*).

Material: Thracian Plain: Stara Zagora, on living tree of *Prunus* sp., 01–15.07.2002, 1 ex., leg. G. Murzov (EM); Yagodovo, 42°10′70″N, 24°86′57″E, 20–28.06.2021, 1 ex., leg. V. Genchev (VS).

***Lamprodila* (*Palmar*) *festiva festiva* (Linnaeus, 1767)**

festiva Linnaeus, 1767: 662 (*Buprestis*); Sakalian, 2003: 74 (*Palmar*); Sakalian, Langourov and 2007: 365 (*Palmar*).

Material: Sofia Region: Sofia, reared from stem of *Thuja occidentalis*, sample collection – 02.05.2018, adult emergence – 23–30.05.2018, 4 ex.; Southern Black Sea Coast: Nessebar, reared from stem of *Thuja occidentalis*, sample collection – 27.04.2018, adult emergence – 20.05.–11.06.2018, 16 ex., leg. G. Georgiev (GG). Sofia Region: Sofia, reared from stem of *Thuja occidentalis*, sample collection – 02.05.2018, adult emergence – 23–30.05.2018, 4 ex.; Southern Black Sea Coast: Nessebar, reared from stem of *Thuja occidentalis*, sample collection – 27.04.2018, adult emergence – 20.05.–11.06.2018, 16 ex., leg. G. Georgiev (GG).

Tribe Sphenopterini Lacordaire, 1857

Sphenoptera (*Chilostetha*) *cauta cauta* Jakovlev, 1904

synonym: *petriceki* Obenberger, 1952: 57; Sakalian, 2003: 61; Sakalian, Langourov, 2007: 364.

Material: South Black Sea Coast: Dyuni south of Burgas, 27.06.2004; Sozopol, 29.06.2004, leg. W. Ziegler (Niehuis, p.c.).

Sphenoptera (*Chilostetha*) *jugoslavica* Obenberger, 1926

Material: Thracian Plain: S Sinitovo, 42°07′36″N, 24°22′29″E, 270 m, 22–23.06.2020, 1 ex., leg. T. Ljubomirov (VS); Boboshevo-Simitli Valley: 7 km from Simitli, 25.04.2002, 1 ex.; Malashevska Planina Mt.: Gorna Breznitsa Monastery, 550 m, 31.07.2002, 1 ex. yellow traps, leg. E. Migliaccio (EM); SW Gorna Breznitsa, 540 m, Malaise trap, 02–04.07.2003, leg. T. Lyubomirov (VS); West Rhodope Mts.: Road Yakorouda-Velingrad, 850 m, 20.08.2001, 1 ex., leg. E. Migliaccio (EM); South Black Sea Coast: Lozenets, 19.06.2006, leg. E. Migliaccio (VS).

Sphenoptera (*Chilostetha*) *laportei* Saunders, 1871

synonym: *sceptrifera* Obenberger, 1952: 55; Sakalian, 2003: 62; Sakalian and Langourov, 2007: 364.

substriata: Sakalian, 2003: 57; Sakalian, Langourov, 2007: 364 (nec Krynicki, 1834: 166).

Material: East Rhodope Mts., 396–425 m, near Kechi Kaya Peak above Potocharka, soil traps, 3.07.–14.08.2005, leg. D. Chobanov (VS); South Blask Sea Coast: Sozopol, 01.–08.7.2004, leg. W. Ziegler (Niehuis, p.c.).

Remarks: The species *S. laportei* and *S. substriata* are very similar and it is difficult to identify them. According to Kalashian, Sakalian (2007), the main character, which separate these species, concerns the setae of the anal sternite. *S. laportei* has 'Anal sternite besides white setae with rather dense and distinct dark semi-standing setae', while *S. substriata* has 'Anal sternite with few thin white setae'. These characters need clarification and illustration. The setae in *S. laportei* are longer and darker without white ones (Fig. 1 A), while *S. substriata* bears white thiner and shorter setae (Fig. 1 B). The setae are distributed on the all sternitae but they are more visible on the last ones, where they are denser. After revision of the material kept in the collection

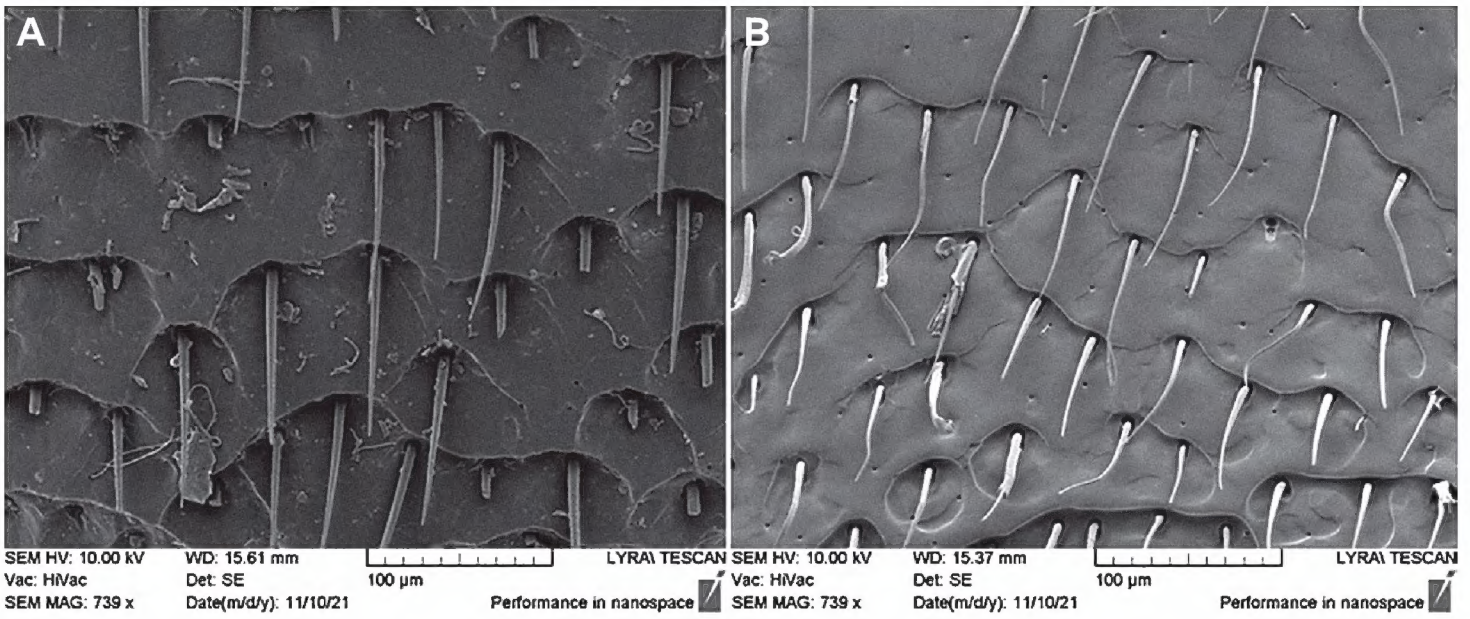

Figure 1. Disks of anal sternitae setae: A – *Sphenoptera laportei*; B – *Sphenoptera substriata*.

of Sakalian and the collection of National Museum, Prague together with V. Kubáň we established that the records about *S. substriata* in Sakalian (2003) and Sakalian and Langourov (2007) are related to *S. laportei*. The distribution of *S. substriata* in Bulgaria needs confirmation.

Sphenoptera (*Sphenoptera*) *antiqua antiqua* (Illiger, 1803)

Material: Sandanski-Petrich Valley: W from Valkovo, 190 m, 04.05.–04.07.2003, soil traps, 1 ex., leg. M. Langourov; Rila Mts.: Kostenets, 22.06.1953, 1 ex., leg. N. Atanassov (VS); East Rhodope Mts.: Rout Ivaylovgrad-Lyubimets, 05.05.2003., 1 ex., leg. D. Doychev (DD).

Sphenoptera (*Sphenoptera) cuprina cuprina* Motschulsky, 1860

Material: West Rhodope Mts.: W Krichim, 42°02′40″N, 24°27′13″E, 401 m, 23.06.2020, 1 ex., crawling on the ground, leg. T. Ljubomirov (VS) (Fig. 2).

Remarks: According to Sakalian et al. (2019), the known exact localities in Balkan Peninsula of this taxon are Greece (Crete), Ognyanovo (Bulgaria) and Orlov Rid (Noth Macedonia). The type locality of its younger subjective synonym *Sphenoptera* (*Sphenoptera*) *balcanica* Jakovlev, 1908 is 'Balkns' (obviosly Balkans), but without concrete locality data (Sakalian 2003). According to Sakalian et al. (2019), the locality in Crete is doubtful, but after the revision of the specimen from Crete kept in the collection of National Museum, Prague, V. Sakalian established that it related to this taxon. Thus, the new locality about this taxon, mentioned above, is the fourth known in the Balkan Peninsula.

Figure 2. *Sphenoptera cuprina cuprina* habitus (from Sakalian et al. 2019).

In conclusion, it could be noted that the new data increases our knowledge about taxonomy, distribution and host plants of the representatives of subfamily Chrysochroinae in Bulgaria.

Acknowledgements

We would like to thank very much Dr. M. Niehuis (Albersweiler, Germany) for sending us interesting and useful data about the distribution of jewel beetles in Bulgaria and Ing. V. Kubáň (Brno, Czechia) for his help in determination of Bulgarian specimens of *Sphenoptera laportei*. The scanning electron microscope pictures were made through the support of the National Endowment Fund '13 Centuries Bulgaria'. We are also thankful to Dr. M. Langourov, Dr. D. Chobanov, Dr. M. Naumova, Dr. T. Teofilova, Dr. T. Toshova, Mr. N. Karaivanov, Dr. S. Lazarov, Dr. N. Kodzhabashev, Dr. E. Chehlarov (Sofia, Bulgaria), Dr. O. Todorov, Dr. P. Boyaszhiev, Mr. V. Genchev (Plovdiv, Bulgaria) for providing us with important information and buprestid beetles for studying.

References

Guéorguiev V, Sakalian V, Guéorguiev B (1997) Biogeography of the endemic Balkan ground beetles (Coleoptera: Carabidae) in Bulgaria. Pensoft Publishers, Sofia-Moscow, 74 pp.

Kalashian MYu, Sakalian V (2007) A review of the genus *Sphenoptera* Dejean, 1833 (Coleoptera: Buprestidae) of Balkan Peninsula. Acta zoologica bulgarica 59(1): 17–28.

Kubáň V, Volkovitsh MG, Kalashian MYu, Jendek E (2016) Buprestidae. In: Löbl I, Löbl D (Eds) Catalogue of Palaearctic Coleoptera. Volume 3. Revised and updated edition. Scarabaeoidea, Scirtoidea, Dascilloidea, Buprestoidea and Byrrhoidea. Brill, Leiden – Boston, pp. 19–32, 432–574.

Sakalian V (2003) A Catalogue of the Jewel Beetles of Bulgaria (Coleoptera: Buprestidae). Zoocartographia Balcanica. 2. Pensoft Publisher, Sofia–Moscow, 246 pp.

Sakalian V, Hristovski S, Georgiev G, Doychev D (2019) *Sphenoptera* (*Sphenoptera*) *cuprina cuprina* Motschulsky (Coleoptera: Buprestidae), a New Species to the Fauna of Macedonia. Journal of the Entomological Research Society 21(3): 369–372.

Sakalian V, Langourov M (2007) Fauna and Zoogeography of Jewel Beetles (Coleoptera: Buprestidae) in Bulgaria. In: Fet V, Popov A (Eds) Biogeography and Ecology of Bulgaria. Monographiae Biologicae, Springer 82: 3, pp. 57–378.